Exhibit 3
(Excerpt)

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA

UNITED STATES OF AMERICA, ET AL., **Plaintiffs,** **v.** **GOOGLE LLC,** **Defendant.**	Case No. 1:23-cv-00108 (LMB/JFA)

EXPERT REPORT OF MARK A. ISRAEL

January 23, 2024

HIGHLY CONFIDENTIAL
SUBJECT TO PROTECTIVE ORDER

which enables publishers served by Google to be paid more over time for each impression they generate, even as advertisers pay less per click on those same advertisements. Strikingly, Plaintiffs propose this "solution" without any attempt to demonstrate the existence of an alternative ("but-for") world, which—absent some particular actions by Google, and with the imposition of a duty to deal on Google—would have yielded even better outcomes.

17. Plaintiffs support the need for such a "solution" only by: (i) artificially focusing separately on particular sub-pieces of the overall ad tech stack, (ii) wrongly calling those sub-pieces markets, and then (iii) ignoring many of the competitors that supply those sub-pieces. In this way, Plaintiffs claim to find monopoly power where none exists, and they claim to find harm to competition within the narrow sub-pieces they examine, while ignoring benefits created by the same actions they condemn, and while ignoring the overall effects of the actions on the number of matches made, the value created from those matches, and the effects on advertising output.

18. A more appropriate competitive analysis starts by recognizing that innovations by Google and others—the very innovations that would likely have been sacrificed or at least significantly slowed by Plaintiffs' proposed duty to deal—have been critical to overcoming daunting challenges, thus permitting the birth and growth of the ad tech industry. Those challenges derive from the fact that when internet users view the content of digital publishers—of websites, apps, social media platforms, or online retail sites (among others)—it creates billions of impressions per day. These impressions—effectively the attention of specific users, with specific characteristics and preferences, looking at particular content—are sold to advertisers. Such sales require that the set of interested advertisers be identified—and then that an advertiser who places a particularly high value on each impression be selected, and prices be set, generally via a series of auctions—all within fractions of a second as webpages or apps load. If the process works well

house, and the extent to which to work with particular other competitors, this is part of competition on the merits.

22. Because they artificially divide the match-making process into sub-components and define them as separate antitrust product markets, Plaintiffs treat integration of those components—which generally helps the match-making process to function more smoothly—as competitively suspect, going so far as to label it anticompetitive tying rather than procompetitive integration. In fact, by integrating sell-side, exchange, and buy-side tools, firms can make sure those tools work seamlessly together, something that can be particularly beneficial given the need for tight coordination at all levels of the ad tech stack to make the match quickly and optimally. For example, the tight integration of DFP and AdX is a benefit to publishers, and thus competition on the merits.

23. Integration also allows a firm to consider all the benefits of investments it makes, including those due to the "indirect network effects" across the two sides of the market (that Plaintiffs acknowledge exist), which mean that investments that attract more advertisers also attract more publishers and vice versa. Only an integrated firm that serves both sides of the market has an economic incentive to consider fully such benefits on both sides of the market, meaning integration strengthens investment incentives. And integrated firms can balance the needs of publishers, advertisers, and users to maximize the total value of matches created (e.g., enabling more ads but not "spammy" ads, enabling publishers to capture more value from their content but not with unfair sales practices, and considering "latency" and other effects on the user experience when designing ad tech). In the case of Google, the fact that it also has a large search business that benefits from more activity on the open web means that it has an incentive

- Connected TV display advertising—which Plaintiffs' markets exclude—grew from essentially zero percent of U.S. display ad spending in 2013 to 15 percent in 2022.

- Direct sales of display advertising between advertisers and publishers (including programmatic direct options)—which Plaintiffs' markets exclude—accounted for at least 70 percent of U.S. display ad spending throughout the entire 2013 to 2022 period.[7]

48. *Plaintiffs' proposed relevant product markets violate core principles of market definition and thus are overly narrow in the sense that they leave out critical competitive constraints (and thus fail at the most important purpose of market definition) (Section IV):* The primary purpose of market definition is to identify the most important competitive constraints faced by the firm and products in question, and thus to provide the proper setting in which to assess the extent to which the firm in question has market or monopoly power in the face of those constraints. Plaintiffs define overly narrow product markets—omitting key competitive constraints—which violate core principles of market definition and thus cannot provide a sound basis on which to assess market power.

- *Markets should include all significant competitive constraints:* The relevant market(s) should be defined to include all close competitors to the firm (and its relevant products) whose conduct is at issue. Close competitors are those competitors that impose significant competitive constraints on the product(s) at issue—meaning the competitors that would, directly or indirectly, take significant revenue from the firm if it were to raise its prices or lower the quality of its offerings. A market definition that excludes

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[7] In contrast, indirect sales of display advertising between advertisers and publishers remained relatively constant over the relevant time period, accounting for 21 percent of U.S. display ad spending in 2013 and 23 percent in 2022.

significant competitive constraints will naturally (but mistakenly) find a lack of competition in the narrowly defined market, and naturally (but mistakenly) find the presence of significant market or even monopoly power.

For example, as explained in greater detail below, markets limited to "open web display advertising" miss the most active areas of competition in digital advertising and ad tech, and thus do not capture the most significant competitive constraints on Google. Hence, such an artificially narrow market definition does not provide a sound basis for assessing the extent to which Google's ad tech products possess market power or for assessing the effects of Google's challenged conduct. Understanding the competition that exists between open web display advertising and other forms of display advertising (including but not limited to the strong competition that comes from so-called "walled gardens" such as Meta and Amazon) is critical to evaluating both the extent of Google's market power and the effects of the challenged conduct. *As one simple implication for the present case, a market definition that defines Meta and Amazon out of the market is not useful for drawing insights about the actual competition that Google faces*.

- *Application of principles of market definition to two-sided markets with indirect network effects:* A particular complication arises in this case because the ad tech industry is characterized by indirect network effects. One consequence of indirect network effects is that actions on one side of the market necessarily affect outcomes on the other side of the market; for example, actions that reduce the amount of advertising inventory offered by publishers will reduce the number of bids for digital ads and vice versa. Likewise, actions that create new digital properties where users see digital ads—for example, the

creation of a new social media platform—will affect the number and amount of bids for digital ads sold on pre-existing digital properties.

This fact implies that ad tech intermediaries are competitively constrained by the options that *both* publishers and advertisers have, regardless of whether the intermediary is publisher-facing or advertiser-facing or both. This follows because one of the constraints on any action that would harm one side of the market (e.g., higher prices) is that—due to feedback effects—it would also cost sales on the other side of the market. When ad tech intermediaries extract more of the surplus created by matches between advertisers and impressions created when users visit publishers' digital properties, that makes ad tech less attractive (for publishers, advertisers, or both), which reduces the total quantity of digital advertising transacted via ad tech. As the quantity transacted falls, so do the revenues of ad tech intermediaries on both sides of the market, because intermediaries earn money when they facilitate transactions. Because every sale by a publisher is a purchase by an advertiser, a purely one-sided focus is necessarily incomplete: Substitution away from ad tech on either side costs all intermediaries business. Due to the feedback effects and constraints on both sides of the market—and contrary to Prof. Lee's analysis—the indirect network effects that characterize two-sided markets imply that analysis of relevant antitrust markets requires consideration of *all* the dimensions of substitution on both sides of the platform, not just constraints on one side.

- *Plaintiffs' "advertiser ad network" market is overly narrow:* Plaintiffs allege that "advertiser ad networks" for open web display advertising constitute a relevant product market. However, this narrow market definition excludes important competitive alternatives that advertisers can make use of.

Even within the scope of open web display advertising, advertisers can access the same inventory using other types of buying tools such as demand-side platforms (DSPs) and/or buying directly from publishers, options that are excluded from Plaintiffs' narrow "advertiser ad network" market. In addition, advertisers can substitute to forms of advertising that Plaintiffs exclude from their alleged relevant market, including advertising on social media properties and in-app advertising. For example, if an advertiser is not successfully reaching its target audience when it utilizes Google Ads, it may shift ad spend to Meta Ads Manager in the hopes that it can reach its target audience on Facebook or Instagram. Given the wide range of options to which advertisers can and do switch (as demonstrated by Prof. Simonson's survey and other empirical evidence)—and the associated ad tech that facilitates those transactions—Plaintiffs' market definition is untenable.

Including other open web display advertiser buying tools such as DSPs reduces Google's share in a candidate advertiser buying tool market to no higher than around 50 percent, without even considering other omitted competitive constraints like social media advertising. Further including direct purchases in that market (but continuing to omit other important competitive constraints like social media advertising), Google's share is around 40 percent based on impressions and less than 30 percent based on ad spending. Considering all buying tools for display advertising (i.e., including social media and all other forms of display advertising), Google's share is less than 20 percent.

- *Plaintiffs' ad exchange market is overly narrow:* Plaintiffs allege that "ad exchanges for indirect open web display advertising" constitute a relevant product market. However, publishers and advertisers have important options to substitute away from indirect sales

transacted through ad exchanges—meaning important paths to connect advertisers and publishers without relying on indirect sales—that Plaintiffs' market omits. Publishers and advertisers can and do disintermediate ad exchanges with direct sales. As one demonstration of the importance of this substitution between direct and indirect channels, a core purpose of a publisher's ad server is to allocate sales of impressions between direct and indirect buyers (via functionality such as Enhanced Dynamic Allocation). Similarly, the deprecation of third-party cookies has caused a shift to direct purchases (which enable the use of first-party cookies rather than third-party cookies).

In addition, the same alternatives to "open web display advertising" that exist for publishers and advertisers with respect to publisher ad servers and advertiser buying tools also exert competitive pressure on ad exchanges. For example, advertiser substitution away from open web content (e.g., toward walled gardens like Meta or Amazon) or publishers doing the same (e.g., toward apps) is explicitly a shift from an open web-based exchange to an exchange-equivalent elsewhere, which directly reduces open web exchange revenue.[8] All of these options—along with the large number of ad exchanges for indirect open web display advertising (that is, the extensive competition even within Plaintiffs' alleged market)—constrain Google's behavior in providing ad exchange services. Put simply, there are many paths to connect advertisers and publishers that do not depend on Google's ad exchange.

[8] Throughout this report, I use the term "open web" for expositional convenience. However, for the reasons explained in Section IV, this terminology does *not* delineate relevant antitrust product markets.

Google's share in a candidate ad exchange market is less than 45 percent *even taking Plaintiffs' market as given*. Including direct sales in that market (to say nothing of other omitted competitive constraints like social media advertising), Google's share is less than 40 percent based on impressions and less than 30 percent based on ad spending. Considering all display advertising spending, less than 20 percent uses Google's ad exchange tools.

- *Plaintiffs' publisher ad server market is overly narrow:* Plaintiffs allege that publisher ad servers for open web display advertising constitute a relevant product market. In fact, publishers have important options for their content, their ad formats, and their ad tech tools, all of which enable them to substitute away from Google's ad server, and all of which Plaintiffs' market omits, including (i) shifting more of their content (and associated monetization) to apps, something that is a strategic focus of many publishers; and (ii) self-supply of ad server technology (which is particularly attractive to the largest publishers that account for the vast majority of activity on Google's ad server). Both of these alternatives would cause a loss of sales for Google's open web-focused ad server and thus competitively constrain Google. Indeed, most competitive focus in recent years is on mobile and apps in particular, yet Plaintiffs define this competitive activity out of their analysis by excluding the ad server analogue for in-app ads from the market.

  Expanding Plaintiffs' publisher ad server market to include in-house ad servers (such as those used by Meta for advertising on its own properties), Google's current share is less than 40 percent. Moreover, among the in-app mediation platforms (the in-app analogue of a publisher ad server) serving the rapidly growing segment of in-app display advertising, Google's share is also less than 40 percent. Considering all display

advertising spending, only approximately 30 percent currently uses Google's publisher ad server tools.

- *Plaintiffs' proposed markets are inconsistent with commercial realities:* The pricing patterns observed in the data, both over time and across ad tech components, refute Plaintiffs' proposed markets and demonstrate that Plaintiffs are alleging an actual monopolist that does not raise prices. Instead, these patterns show that reliance on component-specific markets at different levels of the ad tech stack does not provide a sound economic framework with which to assess Google's alleged market power or its challenged conduct.

  Regarding variation in prices and concentration over time, exits by publisher ad servers create an opportunity to test Plaintiffs' candidate markets. If component-specific markets at different levels of the ad tech stack are valid antitrust markets, exits due to Google's alleged anticompetitive conduct should result in higher prices and lower output. But that is not what is observed in the data, which show DFP's prices *declining* and overall output *increasing* over time, even as ad server exits have occurred. Moreover, Plaintiffs have not demonstrated that prices would have declined even more absent the challenged conduct.

  Similarly, despite the alleged increases in AdX's share of open web ad exchanges—from almost nothing in 2008 to an alleged "more than 50%" today (though in fact its true share is lower as I explained above)—and despite Plaintiffs' claim that Google has monopolized ad exchanges over this time period, AdX's average fee has stayed essentially constant. Thus, Plaintiffs' proposed component-specific product markets are inconsistent with economic realities and do not provide a useful economic framework for

assessing market power or competitive effects. Instead, competitive constraints beyond Plaintiffs' alleged markets must be constraining the observed pricing patterns. Because these competitive constraints are omitted from Plaintiffs' product market definitions, those definitions are neither valid nor informative about the extent to which Google possesses market power.

Regarding variation in prices and concentration levels across ad tech components, if Plaintiffs' three *separate* proposed markets were valid—such that shares within those markets were credible indicators of market power—Google should be able to take its biggest cut of ad spending in the market where its share is the highest. Instead, Google's fees are lowest where its alleged component-specific share is highest (publisher ad serving). As with the variation in prices over time, this fact demonstrates that Plaintiffs' proposed component-specific product markets are not valid, as they do not provide a sound economic framework for assessing market power or competitive effects. Rather, consideration of the full two-sided market is required to understand the pricing structure across that market.

Finally, Plaintiffs' proposed component-specific markets are inconsistent with increasing integration by ad tech providers and their products, which means firms are competing by offering products that cross over more than one of Plaintiffs' narrow markets and that, in some cases, skip over Plaintiffs' proposed markets entirely. For example, direct integrations between advertiser buying tools and publishers compete with ad exchanges and provide an alternative way to connect advertisers and publishers with no need for an exchange. Similarly, direct integrations between ad exchanges and advertisers compete with advertiser buying tools. Plaintiffs' component-level markets ignore these direct

integrations—which shatter the artificial boundaries between their component-specific markets—and thus fail to properly account for their competitive implications.

- *A single two-sided market definition properly captures the competitive realities of the ad tech industry and the competition that Google faces:* A two-sided market definition that considers the various ad tech components as a single platform that matches advertisers and publishers provides the proper and most informative economic framework in which to understand Google's behavior and the competitive environment in which it operates. Specifically, such a two-sided market: (i) includes relevant competitive constraints from both sides of the market; (ii) makes sense of Google's pricing patterns; (iii) explains why Google focuses on the competitive pressures imposed by walled gardens, which themselves offer an integrated solution to connect advertisers to publishers; and (iv) allows for the fact that firms may compete by offering various combinations of products from Plaintiffs' artificially narrow component-specific markets as a single product.

  Regarding Google's pricing patterns, firms in two-sided markets have an incentive to set a pricing structure across both sides of the market that takes into account competitive conditions on both sides of the market. It is not uncommon to see low (or even negative) prices on one side of the market (e.g., the customer-facing side of credit card markets) even if that side of the market, on its own, would appear to have greater market concentration. Such patterns—which are inconsistent with the use of separate component-specific markets—can only be understood by properly considering the full two-sided market. Here, the observed ad tech pricing patterns (such as low prices for publisher ad servers) can best be explained by the fact that Google has strong incentives to set its own prices (and develop other product features) in such a way as to recognize

competitive constraints from both sides of the market, and to balance the interests of advertisers, publishers, and users.

Regarding competition with walled gardens (which Prof. Lee refers to as digital properties "using integrated advertising tools"), in two-sided markets, there is often vigorous competition between open and closed platforms. In the present context, Meta and Amazon operate owned-and-operated advertising platforms that are much more closed than Google's, and yet the evidence that I discuss below indicates significant substitution between open web display advertising and advertising on walled gardens.

Google's share within a single two-sided transaction market for display advertising (as opposed to Plaintiffs' component-specific open web display advertising markets) is less than 30 percent and declining, and has been less than 50 percent over the entire 2008-2022 period. Within a single two-sided transaction market for all digital advertising (including search advertising), Google's share is less than 40 percent and declining, and has been less than 50 percent over the entire 2008-2022 period.

49. Because competitive conditions vary across countries—driven by differences in incomes, language, the regulatory environment, and other factors—it is most appropriate to assess competition and the effects of Google's challenged conduct in a geographic market limited to the United States. Analysis based on worldwide data, which inaccurately blends the different competitive conditions in other countries with those in the United States, obscures the nature of competition that exists in the United States.

50. *Google does not have monopoly power in any properly-defined relevant market (Section V):* For Google to have monopoly power as a matter of economics, it must be the case that Google has the ability to profit by restricting market-wide output, without that output being

competitive effects.[55] The fundamental inseparability of the two sides of the market is even more apparent when, as explained in Section III.B.1 above, the two sides of the market share the same measure of output.[56] Plaintiffs' experts generally focus on the potential relevance of indirect network effects as a source of competitive advantage and/or as a barrier to entry,[57] but discount or even ignore the implications of indirect network effects for defining antitrust markets and evaluating the competitive effects of Google's conduct.

119. Given the inherent linkages between the two sides of the market, Plaintiffs' approach of carving up the ad tech stack and defining markets around individual components obscures the overarching competition that exists to create matches between advertisers and publishers' impressions. Despite imposing significant competitive pressure on Google, competition that does not neatly fit into Plaintiffs' component-level markets is simply "defined out of" Plaintiffs' analysis, as though it does not exist. For example, despite the fact that some of the largest internet publishers (e.g., social media sites such as Facebook and TikTok) do not use Google's publisher ad server and instead rely on in-house options, Plaintiffs claim that the ability of publishers to bring ad tech in-house can essentially be ignored for purposes of evaluating the competition aced by Google's ad tech offerings.

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55 See, e.g., *Evans (2003)*, p. 355 (stating that, for example, "[O]ne cannot talk about the individual prices [on each side of the market] in isolation. Any change in demand or cost on one side of the market will necessarily affect the level and relationship of prices on all sides.").

56 See generally *Filistrucchi (2018)*, p. 38 (emphasizing the relevance of "the presence and observability of a transaction between the two groups of platform users" to the economic analysis).

57 See, e.g., *Lee Report*, ¶ 30 (stating "overcoming indirect network effects enjoyed by existing incumbents" as a barrier to entry); *Abrantes-Metz Report*, ¶ 166 ("[n]etwork effects can create a natural barrier to entry"); and *Weintraub Report*, ¶ 79 ("indirect network effects can magnify the benefits of having scale").

G. A SINGLE TWO-SIDED MARKET DEFINITION PROVIDES THE APPROPRIATE CONCEPTUAL FRAMEWORK IN WHICH TO UNDERSTAND GOOGLE'S BEHAVIOR AND THE COMPETITION IT FACES

344. In the prior sections, I explained that Plaintiffs' proposed component-level product markets do not constitute well-defined markets, exclude relevant competitive constraints, and do not comport with important commercial realities. In this section, I explain that considering a market for ad tech products as a whole—meaning as a single two-sided marke —addresses many of the shortcomings of Plaintiffs' approach to market definition and better captures the competitive constraints facing Google.

345. From an economic perspective, consideration of a single two-sided market is appropriate even if some competitors operate at only certain levels of the ad tech stack while other competitors are fully integrated. This is because each alternative imposes competitive pressure on Google, and advertisers and publishers can mix and match components from multiple providers in order to interact with each other without reliance on Google. Indeed, only a single two-sided market can capture the richness of this competition, in which some matches are made using tools on all three levels from a single provider, some are made by mixing and matching tools, and some cut out one or more of the tools altogether. Such cross-firm and cross-tool competitive strategies are a key part of the dynamically competitive ad tech market even if they are inconsistent with Plaintiffs' attempt to force all options into three separate component-specific boxes.

346. In addition to these conceptual points, I also demonstrate in this section that Google's current share of a single two-sided market for ad tech tools is less than 40 percent. Within a single two-sided transaction market for U.S. display advertising, Google's share was only

approximately 25 percent in 2022, and was no higher than 46 percent over the entire period of available data from 2008 to 2022 (with Google's share declining over the past decade).

1. It is appropriate to define a single two-sided market for ad tech tools

347. A two-sided market definition that considers the various ad tech components as a single platform that matches advertisers and publishers provides the proper conceptual framework with which to understand Google's behavior and the competitive environment in which it operates.[438] Specifically, it reflects marketplace realities of the nature of matching advertisers and publishers' impressions, makes sense of Google's price patterns, and explains why Google focuses on the competitive pressure that properties using integrated advertising tools impose on it.

348. As explained above, the fundamental purpose of ad tech is to match advertisers to the impressions created when internet users visit online content publishers' digital properties. Advertisers and publishers have a variety of options to accomplish such matching, including negotiating direct deals, using various combinations of tools from different ad tech providers, or using a tool or set of tools from a single integrated ad tech provider. Advertisers and publishers, especially the largest and most sophisticated that account for the vast majority of ad spending, assess all of these competitive options and seek to use the options that yield the greatest return.

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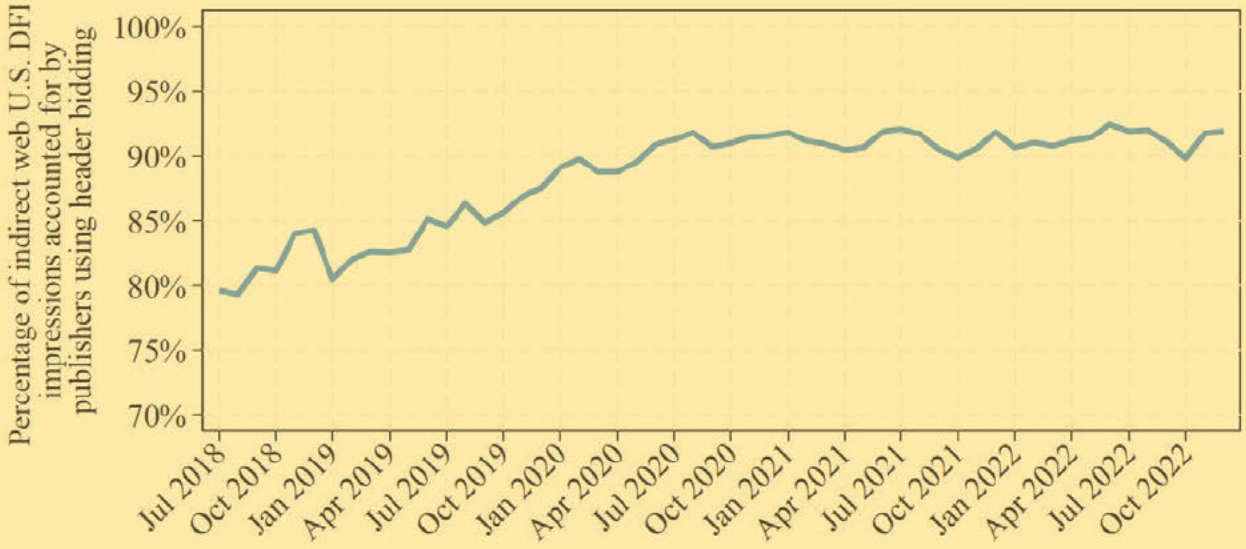
438 *Lee Report*, ¶ 173 ("As the discussion above makes clear, even though I refer to various ad tech products as facilitating transactions between advertisers and publishers, they may do so by working with other products in the ad tech stack. For example, an ad exchange can sell a publisher's impression managed by a publisher ad server to a DSP used by an advertiser (or its ad agency). The ability of an ad exchange to attract advertisers and publishers—and the extent to which it is affected by indirect network effects—will thus depend on its ability to work with other ad tech products that are, in some sense, closer to publishers (publisher ad servers) or advertisers (bidding tools including DSPs) in the ad tech stack.").

header bidding, and thus these publishers have an active way to receive demand from advertisers that does not depend on AdX (or Google Ads).

Figure 82: Percentage of DFP U.S. Indirect Web Impressions Accounted for by Publishers Using Header Bidding, Jul 2018-Dec 2022



Sources: GOOG-AT-MDL-DATA-000482008 to -2531 (DFP RFP 243 data), GOOG-AT-MDL-DATA-000066537 to -482007, GOOG-AT-MDL-DATA-000508827 to -58886, and GOOG-AT-MDL-DATA-000561536 to -4882 (AdX RFP 243 data), and GOOG-AT-MDL-DATA-000482532 to -6515 (AdSense RFP 243 data)
Notes: Publishers are defined as using header bidding in a given month if at least two percent of their impressions were won by header bidding.

564. Other sources likewise confirm that header bidding is frequently used by publishers. For example:

- A survey of publishers by Advertiser Perceptions indicates that, between the first half of 2020 and the first half of 2022, between 65 percent and 76 percent of respondents used header bidding.[801]

801 Advertiser Perceptions SSP Reports, Waves 5-7 and 9: GOOG-DOJ-AT-00608572 (Wave 5) at -584; GOOG-AT-MDL-004170032 (Wave 6) at -043; GOOG-AT-MDL-000011823 (Wave 7) at -838; and GOOG-AT-MDL-000016711 (Wave 9) at -722.

- eMarketer reported that, between January 2018 and March 2019, the fraction of top 1,000 websites adopting header bidding increased from 73.3 percent to 79.2 percent.[802]
- According to Q1-2022 data from Kevel, 70 percent of US publishers used header bidding.[803]
- A 2020 report by PubMatic indicates that "more than 9 in 10 US publishers use header bidding to monetize desktop inventory."[804]
- Prebid, one of the leading header bidding providers, reports that more than 20,000 publishers use Prebid software.[805]

Indeed, Plaintiffs' expert Dr. Abrantes-Metz acknowledges that "[h]eader bidding was widely adopted by publishers," citing documents indicating that 80 percent of publishers had adopted header bidding by 2019.[806]

565. The key takeaway from this evidence is that header bidding was not only alive and well during the time period focused on by Plaintiffs' Complaint, *it was growing significantly*, which is more consistent with ongoing and vibrant competition than Google stamping out competition with anticompetitive conduct. And even more importantly, the fact that header bidding is growing means it *has not been excluded*, but rather is an active competitor to Google. Of course Google is taking steps to try to capture share from header bidding—that is the very definition of

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802 Ross Benes, "Five Charts: The State of Header Bidding," eMarketer Insider Intelligence, May 30, 2019.

803 Kevel, "Header Bidding (HBIX) 2022 Tracker," 2022.

804 PubMatic, "The State of Omnichannel Wrapper: US Market Landscape Study," 2020, p. 1.

805 Prebid, "Introduction to Prebid," 2023.

806 *Abrantes-Metz Report*, ¶ 121. Prof. Lee remarks that "publishers increasingly adopted […] header bidding around 2014-2015" (*Lee Report*, ¶ 154).

advertising spend, frequently use multiple buy-side tools and shift spending across those tools; in turn, those buy-side tools frequently bid into multiple different exchanges.[845] The key implication of these facts is that publishers and advertisers can readily reach one another via non-Google ad tech tools, providing a clear avenue for those tools to effectively compete.

587. A survey of advertisers by Advertiser Perceptions indicates that advertisers *generally* use multiple buy-side tools to purchase display advertising. Between 2017 and 2022, advertiser survey respondents indicated using an average of 2.8 to 4.0 buy-side tools to purchase digital advertising.[846] Common non-Google buy-side tools used by advertisers include Adobe, Amazon, and The Trade Desk (among many others). Prof. Lee acknowledges that "documents indicate that multihoming costs for advertisers for DSPs are low."[847]

588. Data from Google's exchange AdX likewise confirm that the majority of advertising spending is accounted for by advertisers that use multiple buy-side tools.[848] In 2022, for example, 84 percent of spending among advertisers identified in the data was from advertisers that used at least two buying tools during the year; 54 percent of spending was from advertisers

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845 Deposition of Susan Schiekofer (GroupM), September 26, 2023, p. 54:4-10 ("Within a DSP, you have the ability to buy lots and lots of exchanges. So an exchange could be -- it could be AdX. It could be Magnite. It could be PubMatic. It could be Yieldmo. And there's, like a -- OpenX […] there's just a ton of exchanges.").

846 Advertiser Perceptions DSP Reports, Waves 3-7 and 10-12: GOOG-AT-MDL-009440238 (Wave 3) at -257; GOOG-AT-MDL-009555706 (Wave 4) at -719; GOOG-DOJ-AT-00748293 (Wave 5) at -303; GOOG-AT-MDL-013235497 (Wave 6) at -507; GOOG-AT-MDL-004548615 (Wave 7) at -619; GOOG-DOJ-AT-02524665 (Wave 10) at -670; GOOG-AT-MDL-001272416 (Wave 11) at -421; and GOOG-AT-MDL-008928829 (Wave 12) at -875.

847 *Lee Report*, ¶ 188.

848 For a discussion of the distribution of advertising spending across advertisers, focusing on the advertisers using Google Ads, see Section VIII.B.1(a) bove.

595. A survey of publishers by Advertiser Perceptions confirms that publishers often work with multiple exchanges to sell their ad inventory. Between the first half of 2018 and the second half of 2020, publisher survey respondents indicated using an average of between 4.4 and 6.7 supply-side platforms.[856] (The survey specifically asks publishers about their use of "supply-side platforms," which are generally synonymous with "exchanges.") Between the second half of 2020 and the first half of 2022, "small" publisher survey respondents (with less than 20 million unique monthly visitors) indicated using an average of 4.7 to 6.3 supply-side platforms and "large" publisher survey respondents (with 20 million unique monthly visitors or more) indicated using an average of 5.6 to 7.2 supply-side platforms.[857] Common non-Google exchanges used by publishers include PubMatic, Magnite, Xandr, and Index Exchange (among others).

596. Google data similarly indicate pervasive publisher multi-homing across exchanges, including for publishers using DFP. Non-Google exchanges are tracked in the available DFP data when (i) publishers use Open Bidding and/or (ii) the exchanges publishers use with header bidding can be inferred by the way publishers configure DFP.[858] For the set of U.S. DFP impressions for which the corresponding exchange is identified in the data (which likely understates the full extent of publisher multi-homing across exchanges), Figure 88 summarizes the percentage of total 2022 impressions accounted for by publishers using one or multiple

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856 Advertiser Perceptions SSP Reports, Waves 1-6: GOOG-AT-MDL-B-004577168 (Wave 1) at -186; GOOG-AT-MDL-012877140 (Wave 2) at -156; GOOG-AT-MDL-010708075 (Wave 3) at -090; GOOG-AT-MDL-004168924 (Wave 4) at -933; GOOG-DOJ-AT-00608572 (Wave 5) at -582; and GOOG-AT-MDL-004170032 (Wave 6) at -037.

857 Advertiser Perceptions SSP Reports, Waves 6-9: GOOG-AT-MDL-004170032 (Wave 6) at -037 and -040; GOOG-AT-MDL-000011823 (Wave 7) at -829; GOOG-AT-MDL-001460055 (Wave 8) at -060; and GOOG-AT-MDL-000016711 (Wave 9) at -716.

858 See n. 799 for further explanation of how Google infers the use of header bidding from the way that publishers configure DFP.

> about mistakes that publishers had made or accidents. The old priority system was just hard to manage. A long-term benefit was by having a unified auction with unified floors that applied consistently, I think that addressed some of the concerns about unusual or, you know, potentially unfair or strange, hard-to-understand dynamics that I hope increased long-term trust in the system, thereby bringing more spending to this ecosystem, benefitting publisher revenues over the long term.

Google's ordinary-course documents corroborate this conclusion. For example, one document stated that "it's widely believed that managing rules is far too difficult. This is because while the mechanisms are simple, it turns out they require complex configurations for even basic use-cases."[1084]

720. Second, the evidence does not support a claim that publishers were harmed in aggregate by UPR. To the contrary, the evidence indicates that the vast majority of publishers were either unaffected by or *benefited* from UPR. For example, the ad exchange Magnite (a *competitor* of AdX) found that UPRs could substantially increase publisher revenue, primarily by helping publishers sell inventory that would otherwise go unsold.[1085] Similarly, according to a survey of

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1084 GOOG-DOJ-AT-00593475 at -475.

1085 Ashley Wheeler, "Flooring Best Practices Drive 107% Revenue Lift," Magnite, October 4, 2022 ("Magnite recently worked with a premium news publisher to test ways in which they could improve their video ad revenues by replacing exchange floor rules with UPRs. By comparing the 14-day period prior to removing price floors with a 14-day period following the replacement of price floors with Unified Pricing Rules (UPRs), the publisher was able to see significant results.

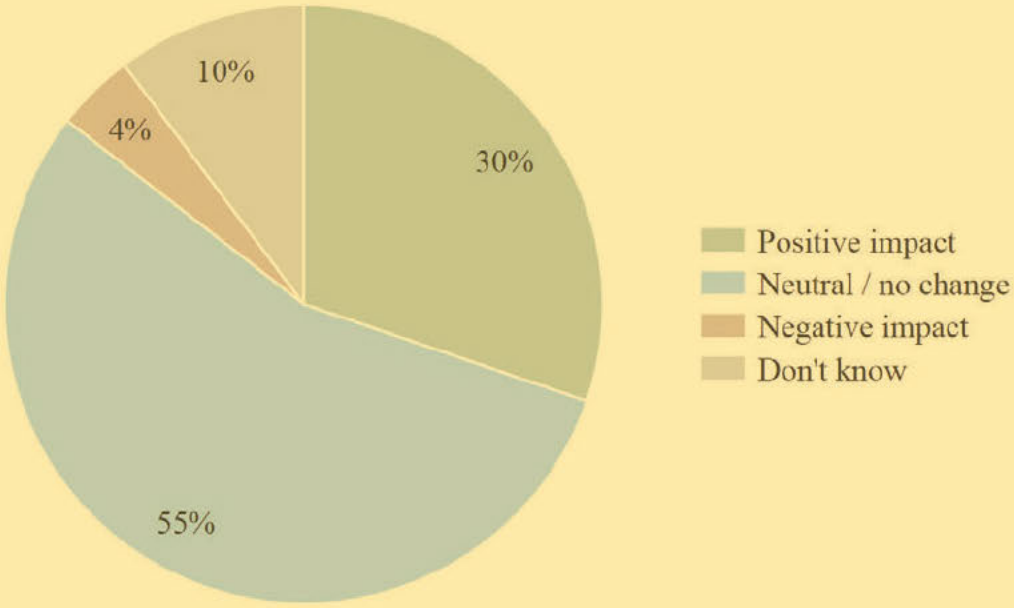
Higher demand for impressions. Price floors can often throttle demand for impressions that would otherwise go unsold, and thereby result in missing out on additional revenues. By removing floors within the exchange and allowing all demand to be sent through to GAM, the premium news publisher was able to achieve a 387% increase in ad responses.

More competitive auctions. By increasing demand and making auctions more competitive, the publisher was able to drive a 146% increase in paid impressions. This was likely due to a discrepancy between the floor settings in the exchange and the true floors set in GAM.

Increase in rCPMs. With more requests being filled there was a 100% increase in ad request CPM.

publishers conducted by Advertiser Perceptions in February 2020, 30 percent of respondents described UPR as having a positive impact on their business, 55 percent described it as having a neutral impact, and only four percent described it as having a negative impact (see Figure 95).[1086] Another ordinary-course Google document indicated that, although there were "[a] few unhappy publishers (including NewsCorp and the Guardian)," Google also received "[p]ositive feedback […] from a variety of publishers, including the Washington Post, Vice Media, NYT, MailOnline, etc."[1087]

Figure 95: Publisher Survey Respondents Rarely Reported UPR Having a Negative Impact



Sources: GOOG-DOJ-AT-00608572 at -577 (Advertiser Perceptions SSP Report: Wave 5, 1H 2020)
Notes: The figure summarizes survey respondents' answers to the question: What has the impact from Google's policy [Unified Pricing Rule] changes been on your business?

Revenue lift. By selling more impressions there was a 107% increase in gross revenue indicating the impact of selling impressions at market rates." (emphasis in the original)).

I observe that publishers could have removed exchange-specific floors even without UPR. In this case, the benefits of UPR arise from causing publishers to abandon sub-optimal strategies (or by making it easier for them to set unified floors).

1086 GOOG-DOJ-AT-00608572 at -577.

1087 GOOG-DOJ-14549757 at -786.

840. Second, even if, counterfactually, Google's conduct did lead to higher advertising prices, advertising costs do not generally translate into higher prices for the advertised products. For example, in standard price-setting models, the cost of advertising does not appear in the firm's first-order conditions because it does not vary with output.[1321] In this scenario, an increase in the cost of advertising may cause the firm to reduce its use of advertising, but would not change the price of the product(s) it is selling. Prof. Lee's caution in stating only that retail prices *can* be higher (even under the mistaken premise that advertising costs are higher) is thus warranted.[1322] Prof. Lee presents no economic model or empirical analysis to demonstrate that higher advertising costs, *even if they were to occur*, would be passed on to consumers or to what degree.

Mark A. Israel
January 23, 2024

1321 Hal Varian (2022), "Advertising Costs and Product Prices," *Journal of Law and Economics,* 65(6): S419-S431. See also *Lee Report*, ¶ 842 ("The extent to which they do so depends on the nature of competition and the characteristics of costs and demand for the product." (citing Jeremy I. Bulow and Paul Pfleiderer (1983), "A Note on the Effect of Cost Changes on Prices," *Journal of Political Economy*, 91(1): 182-185; and E. Glen Weyl and Michal Fabinger (2013), "Pass-Through as an Economic Tool: Principles of Incidence under Imperfect Competition," *Journal of Political Economy*, 121(3): 528-583)).

1322 *Lee Report*, § VIII.B.2 ("Higher fees charged for open-web display advertising *can* lead to higher retail prices." (emphasis added)).